Dr. Sebastian Krieger

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About
- I solve complex problems using data, algorithms, and a combination of technical expertise, problem-solving skills and intuition. Whether improving existing systems or developing new solutions, I approach every challenge with curiosity, creativity, and precision. As a seasoned researcher and data expert, I specialize in optimizing data workflows and applying machine learning, artificial intelligence, and numerical modeling to real-world challenges. My expertise spans a range of domains, including data analysis, ocean hydrodynamic modeling, satellite remote sensing, and software development.

Research background
- Ph.D. in Physical Oceanography, focusing on global ocean dynamics using satellite altimetry.
- Postdoctoral research in near-shore ocean observation, ocean color satellite remote sensing, and hydrodynamic and bio-physical numerical modeling.

Core expertise
- *End-to-end data management*: Design and implement data workflows, including ETL pipeline development, data curation, and integration.
- *Machine learning & AI*: Build and deploy production-ready machine learning models for data generation, predictive analytics, and quality control.
- *Technical leadership*: Lead data-driven projects and mentor junior colleagues, fostering their professional growth.
- *Communication*: Distill complex technical findings into clear, actionable insights for diverse stakeholders.
- *Collaboration*: I enjoy and have experience working with multidisciplinary and cross-cultural teams, both remotely and in-person.
- *Software development best practices*: Including test-driven development (TDD), clean code, data governance, and agile methodologies.
- *Open to relocation*: As a dual Brazilian and an EU citizen, I am available for relocation opportunities within Europe and beyond.

Language skills
- Fluent in English and Portuguese.
- Conversational fluency in French, German, and Spanish.

SELECTED WORK & RESEARCH EXPERIENCE

2018–present **Bloomberg**
São Paulo, SP
Senior data scientist / data engineer
Led the design, implementation, and maintenance of 30+ data workflows and ETL pipelines for financial data products, processing millions of records daily and ensuring seamless delivery to clients, with a special focus in Latin America • Developed and deployed custom machine learning models to forecast economic trends, predict financial conditions, and detect anomalies • Conducted research to expand data product capabilities and enhance analytical features, contributing to the continuous evolution of financial data solutions • Collaborated on public outreach programs, educating clients and students on data science and analytics, while reinforcing Bloomberg's brand presence • Mentored colleagues in best practices for computer programming and data analysis, conducting one-on-one or group training sessions. Supported journalists and business stakeholders with data-driven research and analysis to drive strategic insights.

2016–present **nublia**

São Paulo, SP

Solo data science and technical consultant, online lecturer (concurrent with other activities)

Designed and implemented ETL pipelines to integrate and process large datasets, ensuring efficient and accurate data flow • Applied machine learning and data science techniques to drive business growth and innovation, including customer segmentation models and click-through rate forecasting • Developed data science and analytics training programs, training cohorts of 20+ technical professionals seeking to enhance their skills.

2002–2021 Formula 1 São Paulo Grand Prix

São Paulo, SP

Race secretary / Event operations coordinator, contractor (concurrent with other activities)

Coordinated logistics and information flow between FIA officials, local organizers, and stakeholders to ensure seamless event execution • Provided support to senior officials, including the Clerk of the Course, facilitating smooth operations and decision-making • Managed event setup and operations for high-profile events, overseeing driver meetings, parades, and ceremonies • Created and disseminated critical event information, such as sporting regulations and schedules, to stakeholders. • Leveraged language skills to translate key documents and facilitate communication between international teams • Demonstrated adaptability and problem-solving skills in responding to last-minute, high-pressure situations.

Deputy race-secretary, contractor (concurrent with other activities)

Runner, contractor (concurrent with other activities)

2016 Rio 2016 Organising Committee for the Olympic and Paralympic Games

Rio de Janeiro, RJ

Sport Information Coordinator – Canoe sprint/para-canoe

Led a team of 10 volunteers, ensuring smooth operations in a fast-paced, high-pressure environment • Coordinated the publication and distribution of sporting information, including results and official communications, ensuring accuracy and timeliness • Provided customer service to athletes, team members, and officials, responding promptly to queries and requests in a multi-language environment • Demonstrated a keen eye for detail in reviewing and distributing technical documents, as well as managing the setup of competition installations

2014–2016 Centro de Biologia Marinha, Universidade de São Paulo

São Sebastião, SP

Postdoctoral research fellow

Collected and analyzed data through *in situ* field measurements for various research projects, including the SIMCosta mooring network project, enhancing the understanding of coastal dynamics • Managed and analyzed biogeochemical datasets using data mining and time-series analysis techniques for the Biota/FAPESP Araçá project, providing insights into ecosystem health and function in the Araçá Bay • Designed and implemented a MySQL database for the storage, management, and retrieval of georeferenced data, supporting research initiatives • Developed coupled numerical models integrating hydrodynamics and phytoplankton growth processes to simulate and analyze ecosystem dynamics in marine environments • Taught and mentored graduate and undergraduate students through lectures on data analysis and numerical modeling • CAPES fellow.

2009–2014 Instituto Oceanográfico, Universidade de São Paulo

São Paulo, SP

Sc.D./Ph.D. graduate student

Analyzed satellite remote sensing altimetry images, focusing on global sea level anomalies (SLA) and mesoscale eddies, applying advanced statistical and signal processing techniques • Developed a signal de-noising filter using discrete wavelet transforms (DWT) to detect and extract propagating features in satellite altimetry data • Implemented a geometric feature detection algorithm to identify signatures of mesoscale eddies, aiding in the differentiation

between seasonal variability, westward-propagating planetary waves, and mesoscale eddies • Delivered short courses on Python programming, fostering outreach and sharing technical knowledge with graduate and undergraduate students • Co-organized a scientific symposium, promoting collaboration and integration among oceanography researchers • Actively contributed as a student representative, ensuring effective communication between faculty and students • Served as an undergraduate teaching assistant and co-adviser for student theses, mentoring students and colleagues • CAPES and CNPq fellow.

2008–2009 **Bermuda Institute of Ocean Sciences**
Saint George, Bermuda
Trainee/research scholar
Conducted independent research on the influence of large-scale ocean waves on chlorophyll concentration, analyzing satellite imagery to identify patterns • Delivered a series of short talks to share research findings, honing skills in knowledge dissemination and academic exchange • Participated in scientific cruises aboard the R/V Atlantic Explorer and R/V Oceanus for the Oceanic Flux Program (OFP) and Bermuda Atlantic Time-series Study (BATS), contributing to oceanographic field research and data collection • Nippon Foundation– Partnership for Observation of the Global Ocean (NF–POGO) fellow.

EDUCATION	2009–2014	**Sc.D. Physical Oceanography**
		Instituto Oceanográfico, Universidade de São Paulo
		Thesis title: Mesoscale eddies, Rossby waves and the spectra from altimetry data.
	2008–2009	**Pg.C. Ocean Observatories**
		Bermuda Institute of Ocean Sciences
		Thesis title: Nutrient pumping induced by first mode baroclinic Rossby waves in the Sargasso Sea.
	2006–2008	**M.Sc. Physical Oceanography**
		Instituto Oceanográfico, Universidade de São Paulo
		Thesis title: Spectral variability distribution of baroclinic Rossby waves in the Atlantic Ocean and particularly in the region of the Abrolhos archipelago.
	2000–2004	**B.Sc. Physics**
		Instituto de Física, Universidade de São Paulo

TECHNICAL SKILLS	Open source	pycwt: Free and open source Python module for spectral analysis and statistical significance tests using the continuous wavelet transform (CWT).
	Data analysis	Data mining, dynamical systems, K-nearest neighbours, multi-variate linear and logistic regressions, artificial neural networks, principal component analysis, data visualization, wavelet and Fourier spectral analysis.
	Computer programming	Python, MATLAB/Octave, SQL, Visual Basic.
	Databases	Design and management of PostgreSQL, MySQL/MariaDB, SQLite databases.

OTHER INTERESTS	Volunteering	Online mentor to early-career scientists and post graduate students in marine and aquatic sciences through the Trevor Platt Science Foundation since 2022. • English tutor to young people and adults from public schools in Brazil as part of *Cidadão Pró-Mundo* since 2019.
	Rowing	National and continental rowing umpire accredited by *Confederação Brasileira de Remo* (CBR) and *Confederación Sudamericana de Remo* (CSAR).
	Hobbies	Woodwork, sourdough bakery, cycling, music (guitar, bansuri flute).